

REMARKS

The present Amendment amends claims 1, 8, 9 and 15 and leaves claims 2-7 and 10-14 unchanged. Therefore, the present application has pending claims 1-15.

Claims 1 and 15 stand objected to due to informalities noted by the Examiner in paragraph 2 of the Office Action. Various amendments were made to claims 1 and 15 to correct the informalities noted by the Examiner in paragraph 2 of the Office Action. Therefore, Applicants submit that this objection is overcome and should be withdrawn.

Various amendments were made throughout the specification to correct minor errors grammatical and editorial in nature discovered upon review.

Claims 1-15 stand rejected under 35 USC §103(a) as being unpatentable over Zhang (U.S. Patent No. 6,108,345) in view of Ofek (U.S. Patent No. 6,240,486). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention as now more clearly recited in claims 1-15 are not taught or suggested by Zhang or Ofek whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to claims 1, 8 and 15 so as to more clearly recite that the present invention is directed to a system including a first storage system and a switch apparatus, the switch apparatus, and a system including the first storage system, the switch apparatus and a second storage system.

The system according to the present invention includes the first storage system for storing data, wherein a host computer performs read and write operations on the data stored in the first storage system and a switch apparatus connectable to the first storage system.

The first storage system includes a plurality of ports connectable to the switch apparatus. The switch apparatus includes a first port connectable to the first storage system, a second port connectable to the host computer, a third port connectable to a second storage system for storing data wherein the host computer performs read and write operations on the data stored in the second storage system and a plurality processing apparatuses connectable to the first, second and third ports.

According to the present invention the processing apparatuses converts a first protocol which is used in a connection between the ports of the first storage system and the first port of the switch apparatus and which is used in a connection between the host computer and the second port of the switch apparatus to a second protocol which is used in a third connection between the second storage system and the third port of the switch apparatus, when the switch apparatus transfers data from the first storage system to the second storage system.

The above described features of the present invention as now more clearly recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each other. Particularly, the above described features of the present invention are not taught or suggested by Zhang or Ofek whether taken individually or in combination with each other as suggested by the Examiner.

Zhang teaches, for example, in Figs. 2a-c apparatus containing reconfigurable Local Area Networks/Wide Area Networks (LAN/WAN) bridges for linking LANs to a WAN. Fig. 2c of Zhang provides a high density chassis 70 coupled to WAN 64 and LANs 90, 92 and 96. The LANs 90, 92 and 96 are running fast Ethernet protocol. As taught by Zhang LAN 96 is connected directly to backplane 72c via hub 94 and includes hosts 86 and 88. Remote access chassis 70 of Zhang has been reconfigured by switch 84 and configurable table 82. Further, as per Zhang, the WAN 64 is connected to backplane channel 72b via WAN 60, the configurable WAN/LAN bridge 80 connects LAN 92 to backplane channel 72b and configurable WAN/LAN bridge 78 connects WAN 90 to backplane channel 72b. Further, as taught by Zhang configurable WAN/LAN bridge 76 connects channel 72b to channel 72c and LAN 96 has access to WAN traffic on channel 72b via WAN/LAN bridge 76.

Thus, as is exceedingly clear from the above and upon a thorough review of Zhang it is quite clear that Zhang is not even remotely related to a system as recited in the claims having a first storage and a switch apparatus as recited in the claims.

For example, in the Office Action the Examiner alleges that Zhang teaches that the first storage system corresponds to items 90 and 50a-c as illustrated in Fig. 2c of Zhang. However, Zhang clearly teaches that item 90 is a LAN and that items 50a-c are host computers connected to the LAN 90. Thus, at no point is there any teaching whatsoever in Zhang that a first storage system is provided as recited in the claims. Certainly, such first storage system as recited in the claims do not in anyway correspond to the

LAN 90 having connected thereto a plurality of host computers 50a-c as in Zhang.

According to the present invention as now more clearly recited in the claims the first storage system stores data and permits read and write operations to be performed on the data by a host computer. Such a feature clearly is not possible in the LAN 90 and the host computers 50a-c of Zhang. The host computer 50a-c of Zhang are not a storage system but are host computers interconnected by a LAN.

Further, there is absolutely no teaching or suggestion in Zhang of a switch apparatus as recited in the claims. According to the present invention the switch apparatus is connectable to the first storage system by a first port, is connectable to the host computer by a second port and is connectable to a second storage system by a third port. Such features as recited in the claims are not taught or suggested by Zhang.

In the Office Action the Examiner alleges that the switch apparatus as recited in the claims corresponds to the buffer and switch and convert 110 as illustrated in Fig. 3 of Zhang. The buffer and switch and convert as illustrated in Fig. 3 of Zhang is included in the WAN/LAN bridge 78.

As is quite clear from the teachings of Zhang, the LAN/WAN bridge 78 is intended to connect a LAN to a WAN and is not intended serve as a connection between first and second storage systems and a host computer as in the present invention. In fact, as is quite clear from the above, there is no teaching of a first storage system in Zhang as the first storage system recited in the claims. Further, there is no teaching of a second storage system as recited in the claims. In fact, the Examiner fails to identify any element in

Zhang corresponding to the second storage system as in the present invention. As per the present invention, particularly as discussed in the specification, the present invention is intended to allow for migration of data from a first storage system to a second storage system. No such migration or teaching thereof occurs in Zhang since there is no teaching or suggestion of a first storage system nor a second storage system between which data migration is to be performed as in the present invention.

Thus, since there is no teaching or suggestion in Zhang of the switch apparatus as recited in the claims, surely there is no teaching or suggestion in Zhang of the first, second and third ports which are recited in the claims. The Examiner in the Office Action makes various allegations regarding the first, second and third ports. However, it is quite clear that the Examiner has completely misunderstood the reference and the teachings therein since the alleged ports in Zhang are not connected to the specific elements as recited in the claims.

For example, according to the present invention the first port is connectable to the first storage system. As per the above, there is no teaching or suggestion in Zhang of a first storage system.

Further, according to the present invention, the second port is connectable to a host computer. At no point is there any teaching or suggestion in Zhang of a host computer as recited in the claims, wherein the host computer is intended to perform read and write operations relative to data stored in the first and second storages.

Still further, the third port of the present invention is connectable to a second storage system. According to the present invention the second

storage system is the storage system to which the data is migrated from the first storage system. Such a teaching cannot be found at any point in Zhang.

Even further, the plurality of processing apparatuses recited in the claims as being connectable to the first, second and third ports are not taught or suggested by Zhang. In the Office Action the Examiner alleges that the switch apparatus corresponds to the buffer and switch and converter 110. The internal structure of the buffer and switch and converter 110 are illustrated, for example, in Fig. 5. The internal structure of the buffer and switch and converter 110 includes a MAC/PHY switch 150 having control registers 152-154 and bus drivers 156, 158 and 160.

Thus, at no point is there any teaching or suggestion in Zhang of a plurality of processing apparatuses which are connectable to a first port connectable to the first storage system, a second port connectable to a host computer and a third port connectable to the second storage system as in the present invention as recited in the claims.

Thus, Zhang fails to teach or suggest a first storage system for storing data wherein a host computer performs read and write operations on the data stored in the first storage system and a switch apparatus connectable to the first storage system as recited in the claims.

Further, Zhang fails to teach or suggest the switch apparatus includes a first port connectable to the first storage system, a second port connectable to the host computer, a third port connectable to a second storage system for storing data, wherein the host computer performs read and write operations on the data stored in the second storage system, and a plurality processing

apparatuses connectable to the first, second and third ports as recited in the claims.

Still further, Zhang fails to teach or suggest that the plurality of processing apparatuses converts a first protocol which is used in the first connection between the plurality of ports of the first storage system and the first port of the switch apparatus and which is used in a second connection between the host computer and the second port of the switch apparatus to a second protocol which is used in a protocol of the third connection between the second storage system and the third port of the switch apparatus, when the switch apparatus transfers data from the first storage system to the second storage system as recited in the claims.

The above described deficiencies of Zhang are also evident in Ofek. Therefore, combining the teaching of the Zhang and Ofek in the manner suggested in the Office Action still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Ofek is being relied upon by the Examiner for an alleged teaching of the conversion function performed by the switch apparatus. However, the conversion function taught by Ofek is entirely different from that of the present invention. According to the present invention two types of conversions are performed such as that illustrated in Fig. 1 of the present application wherein a first converter 6 performs conversion between the host computer and the switch apparatus which is connected to the new storage system and a second converter performs conversion between the switch apparatus and the old storage system. Thus, according to the present invention the first converter is used in the first connection between the ports of the first storage system and

the first port of the switch and is also used in the second connection between the host computer and the second port of the switch and the second converter is used in the third connection between the second storage system and the third port of the switch.

Ofek merely teaches the use of a converter 22 as illustrated, for example, in Fig. 1 which performs conversion between the old data storage system 14 and the new data storage system 24. There is no teaching or suggestion in Ofek of any type of conversion that is performed between the host computer and the old storage system and between the host computer and the new storage system as in the present invention as recited in the claims.

Thus, Ofek fails to teach or suggest that the plurality of processing apparatuses convert a first protocol which is used in a first connection between a port of the first storage system and the first port of the switch apparatus and which is used in a second connection between the host computer and the second port of the switch apparatus to a second protocol which is used in a third connection between the second storage system and the third port of the switch apparatus, when the switch apparatus transfers data from the first storage system to the second storage system as recited in the claims.

Therefore, combining Zhang and Ofek in the manner suggested by the Examiner in the Office Action still fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 USC §103(a) rejection of claims 1-

15 as being unpatentable over Zhang in view of Ofek is respectfully requested.

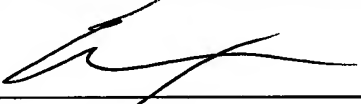
The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references utilized in the rejection of claims 1-15.

In view of the foregoing amendments and remarks, applicants submit that claims 1-15 are in condition for allowance. Accordingly, early allowance of claims 1-15 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (520.39602CX1).

Respectfully submitted,

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